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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,430	08/30/2006	Brendan Edward Allman	20498-005US1 SHW.FP21480	4932

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EXAMINER	
CAMARGO, MARLY S.B.	

ART UNIT	PAPER NUMBER
2622	

NOTIFICATION DATE	DELIVERY MODE
08/28/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No.	Applicant(s)	
	10/598,430	ALLMAN ET AL.	
	Examiner	Art Unit	
	MARLY CAMARGO	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *2-5,8-10,12,13,15-22 and 24-30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,7,11,14 and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Election/Restrictions

1. In response to Applicant's election without traverse filed on June 30, 2009, the examiner acknowledges the following:

    a. Applicant's election of Species IV (Fig 8) and claims 1, 6, 7, 11, 14 and 23.

    b. Claims 2 - 5, 8 – 10, 12, 13, 15—22 and 24 – 30 are non-elected and therefore, they are withdrawn from consideration.

    c. Currently claims 1 – 30 are pending. Claims 2 - 5, 8 – 10, 12, 13, 15—22 and 24 – 30 are withdrawn and claims 1, 6, 7, 11, 14 and 23 are being considered on the merits.

The election/restriction requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 7, 11, 14 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Y. Doi et al., US 4,164,752 A.

Regarding Claim 1: As per Doi reference,

A system for producing at least two differently focused images of an object (Figs 2 and 3 illustrate an optical system for a TV camera, which produces at least three images differently focused)**, comprising: at least two sensors separated from one another** (In Figs 2 and 3, 24R, 24G and 24B are sensors separated from one another)**; a beam splitting means** (Figs 2 and 3, 22 is a beam splitter that separates the incoming light beam into 3 different beams) **for splitting a beam of radiation from the object into at least two resultant beams; and wherein the path length of the two resultant beams to the respective sensors is different** (In Figs 2 and 3, the optical path of the beams going to towards each sensor is different as seen in the Figures)**.**

(In the Abstract; col. 2, lines 22 – 68 and Figs 2 and 3, Doi discloses an optical system for a TV camera that includes an interchangeable taking lens; a color separation prism block or beam splitter as claimed and 3 image sensors, one for each color. Doi also teaches an optical element placed between the image sensors and the prism (beam splitter) and which is capable of varying the optical path length of the light beam incident over the sensors. Doi further teaches that the optical path length varying element may be a plane parallel plate or a combination of two optical wedges having parallel opposite end faces. The plane parallel changes the optical path length by its thickness. Additionally, in case of using the combination of the two wedges, the optical path length is changed by sliding the wedges with respect to each other as the distance

between the opposite end faces is varied. In Doi, changes are made to the optical path length of two of the image sensors, green and blue.)

Regarding Claim 6:

The system of claim 1 wherein the different path lengths are provided by the location of optical elements between the beam splitting means and the sensors (Fig 2, it shows plane parallel plates 23a and 23b (or optical element) place between the beam splitter 22 and sensors 24B and 24G), **so as to create a different path length of the resultant beam from the beam splitting means to the respective sensor.**

(The rejection of claim 1 is incorporated herein. As discussed for claim 1, Doi teaches at least one optical element which is positioned between the beam splitter (prism 22) and two of the image sensors to create a different optical path length as claimed. As discussed before, Doi teaches that the optical element changes the optical path length and it is selected to obtain the focal planes of the green and the blue images accurately. Such plane parallel plates are changeable to other thicknesses.)

Regarding claim 7:

The system of claim 6 wherein the element comprises a pair of transparent wedge-shaped members (See Doi claim 9 for transparent wedge shaped members) **which are movable relative to one another** (Fig 3 shows two pairs of wedges 25a and 25b located between the beam splitter 22 and the

image sensors 24G and 24B. The arrows in Fig 3 indicate the movement of each component of the wedge) **so as to alter the amount of the wedge through which the resultant beam passes to thereby change the path length of the resultant beam to produce the different path lengths. In this embodiment, the sensors are located at equal distances from the beam splitting means** (See Fig 3).

(The rejection of claim 1 is incorporated herein. As discussed for claim 1, in Figs 2 and 3, Doi teaches at least one optical element which is positioned between the beam splitter (prism 22) and two of the image sensors (green and blue). Particularly for Fig 3, Doi teaches that these optical elements are wedges 25a and 25b placed between the prism 22 (beam splitter) and the image sensors 24G and 24B. Doi teaches that they are movable as to vary the thickness of the wedge and in that way to vary the optical path length as the thickness is varied (See col. 2, lines 22 – 68).)

Regarding claim 11: As per Doi reference,

A system for producing differently focused images of an object (Figs 2 and 3 show an optical system that produces different focused images), **comprising: at least two sensors separated from one another** (In Figs 2 and 3, sensors 24R, 24G and 24G are separated from one another); **a beam splitting means** (Figs 2 and 3, beam splitter 22 (or beam splitting means) separates/splits the incoming light beam into 3 resultant beams, one for each image sensor)**for splitting a beam of radiation from the object into at least to**

resultant beams; and an optical element located between at least one of the sensors (Figs 2 and 3 show an optical element 23a; 23b in Fig 2 and 25a and 25b in Fig 3, placed between the beam splitter 22 and the image sensors 24G and 24B. The beam splitter produces different optical path lengths) **and the beam splitting means in the path of the corresponding resultant beam for changing the path length of the beam** (See Abstract and col. 2, lines 22 – 68)**from the beam splitting means to the sensor to thereby produce resultant beams having two different path lengths which are detected by the respective sensors.**

(The rejection of claims 1, 6 and 7 is incorporated herein. As previously discussed, in the Abstract; col. 2, lines 22 – 68 and Figs 2 and 3, Doi discloses an optical system for a TV camera that includes an interchangeable taking lens; a color separation prism block or beam splitter as claimed and 3 image sensors, one for each color. Doi also teaches an optical element placed between the image sensors and the prism (beam splitter) and which is capable of varying the optical path length of the light beam incident over the sensors. Doi further teaches that the optical path length varying element may be a plane parallel plate or a combination of two optical wedges having parallel opposite end faces. The plane parallel changes the optical path length by its thickness. In Fig 2, Doi illustrates plane parallel plates 23a and 23b (or optical element) place between the beam splitting means 22 and sensors 24B and 24G in order to create a different optical path length detected by the image sensors as claimed. Additionally, in case of using an optical element as a combination of two wedges,

the optical path length is changed by sliding the wedges with respect to each other as the distance between the opposite end faces is varied. In Doi, changes are made to the optical path length of two of the image sensors, green and blue.)

Regarding Claim 14:

The system of claim 11 wherein the element comprises a pair of transparent wedge-shaped members (See Doi claim 9 for transparent wedge shaped members) **which are movable relative to one another** (Fig 3 shows two pairs of wedges 25a and 25b located between the beam splitter 22 and the image sensors 24G and 24B. The arrows in Fig 3 indicate the movement of each component of the wedge) **so as to alter the amount of the wedge through which the resultant beam passes to thereby change the path length of the resultant beam to produce the different path lengths.**

(The rejection of claims 1, 6, 7 and 11 is incorporated herein, since claim 14 has the same scope as claim 7 but applied to claim 11. As discussed for the aforementioned claims, Doi teaches at least one optical element placed between the beam splitter 22 and some of the image sensors as to change the optical path length of the respective light beams incident upon such image sensors. Particularly for Fig 3, Doi teaches that these optical elements are wedges 25a and 25b placed between the prism 22 (beam splitter) and the image sensors 24G and 24B. Doi teaches that they are movable as to vary the thickness of the wedge and in that way to vary the optical path length as the thickness is varied (See col. 2, lines 22 – 68).)

Regarding claim 23: As per Doi reference,

A method of producing differently focused images of an object (Figs 2 and 3)**, including: providing at least two sensors separated from one another** (Figs 2 and 3 show 3 image sensors 24R, 24G and 24B separated from one another)**; splitting a beam of radiation emanating from the object into at least two resultant beams** (Figs 2 and 3 show a beam splitter 22 splitting the incoming light beam emanated/reflected by the object into 3 beams, each one going towards a different image sensor)**; and causing the path length of the two resultant beams to the respective sensors to be different** (As seen in Figs 2 and 3, the optical paths to each of the sensors are different from one another as indicated by the dashed lines)**.**

(The rejection of claim 1 is incorporated herein, since claim 23 pertains to the method steps to operate the apparatus/system as recited in claim 1. In order to operate the apparatus of claim 1, it would have necessitated the method steps as recited in claim 23. Therefore, claim 23 is also rejected.)

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. R. A. Dischert, US 4,725,880 A – it teaches a system with a beam splitter that divides the incoming light beam reflected by the object into 3 image sensors, one for each color (red, green, blue) for producing images with improved resolution.

2. F. Usui, US 5,086,338 A – it teaches a color television camera with an optical system including a prism for splitting the incoming light reflected by an object into the 3 basic colors, red, green and blue. The system has correcting lenses between the prism and the 3 image sensors as for adjusting chromatic aberrations.

3. R. Ohmuro, US 5,134,468 A – it teaches an optical apparatus for varying the lengths of optical path of color component light beams that are incident upon 3 image sensors (red, blue and green) used for adjusting a television camera.

4. M. Satoh, US 6,710,806 B1 – it teaches an automatically focusing system for a camera including a prism for beam splitting into 3 beams directed to 3 image sensors (red, blue and green), where two of the image sensors are movable towards and forward from the prism as to achieve high-speed focusing operation.

Contact

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARLY CAMARGO whose telephone number is (571)270-3729. The examiner can normally be reached on 6:00AM - 10PM, M-F, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571)272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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